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# BACKGROUNDER

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## **Technology Cooperation: Sustaining Economic Growth and Environmental Improvement**

For over two decades, U.S. industry has been a world leader in developing energy technologies and implementing environmental policies. Every year, American industry spends more than \$100 billion to protect the environment, and many companies have environmental technology programs overseas. By providing cleaner, more energy-efficient technologies and know-how to developing countries, U.S. industry can simultaneously build on its existing accomplishments and help reduce global emissions of greenhouse gases. Technology innovation and cooperation, guided by the marketplace—not government mandates—is the key to addressing the dual challenges of sustaining economic growth and environmental improvement. U.S. business has the opportunity and the know-how to meet this challenge.

### **Purpose of Technology Cooperation**

Technology cooperation is aimed at helping developing countries expand their economies and improve their quality of life, while at the same time improving their environmental performance. Emissions of greenhouse gases are reduced, in addition to limiting emissions of pollutants such as NO<sub>X</sub> and SO<sub>2</sub>. Technology cooperation includes efforts that combine technology and equipment with "soft" technology – training, management assistance and software. A major product of the private sector's vast operational experience, soft technology could be one of our country's greatest contributions to developing countries and those with economies in transition.

### **Importance of Technology Cooperation**

Technology cooperation is an important component of the U.N. Framework Convention on Climate Change, which states, "The developed countries...shall take all practicable steps to promote, facilitate, and finance, as appropriate, the transfer or access to environmentally sound technologies and know-how to other parties, particularly developing countries...."



The U.N. Intergovernmental Panel on Climate Change (IPCC), charged with assessing the science and economics behind global climate change, predicts that by 2025, non-OECD countries will be responsible for 67 percent of all energy-related carbon dioxide emissions.<sup>1</sup> In addition, both developing countries and former centrally planned economies already emit a far greater amount of greenhouse gases for each unit of GNP than industrialized nations. As the economies and energy demands of developing nations increase, their share of global greenhouse gas emissions are expected to rapidly increase. The IPCC has stated that this projected rapid growth in greenhouse gas emissions creates a crucial need to transfer advanced technology to developing countries.<sup>2</sup>

For this reason, developing countries have an important role to play in any strategy to reduce global greenhouse gas emissions. Special consideration should be given to providing appropriate help to these nations in upgrading their environmental policies, industrial performance and resource management. If steps are not taken to encourage sound economic and environmental developments in developing countries, massive increases in their GHG emissions would overwhelm any emissions reductions made by industrialized nations, thus making stabilization of GHG concentrations impossible.

### **Cooperation Between Government and Industry**

Although technology cooperation is best achieved by the private sector, many developing countries lack the fundamental economic infrastructure. Significant improvements are needed within these countries to encourage cooperative arrangements. Clearly, there is a role for governments, in both developing and developed nations, to play in technology cooperation. For example, the U.S. government is already working to improve technology cooperation between itself and private industry to enhance the competitiveness of U.S. technology. The federal government's resources are important to helping industry identify opportunities for technology cooperation and to providing market-based financing options to encourage the export of American products. In addition, the United States and other governments support programs at the Agency for International Development, the Export-Import Bank, the World Bank and many regional development banks that could support international technology transfers.

**The Private Sector is Essential.** Transferring technology in a way that allows economic growth, while minimizing growth in GHG emissions is a burden that can be satisfied best by the private sector. It is insufficient for a country simply to acquire new technology:

*"One should not attempt to solve energy-efficiency problems in isolation from other efficiency problems. Problems related to vintage equipment, scarcity of management skills, small-scale production, or poor technological infrastructure will not be solved by addressing climate-change or energy goals only."<sup>3</sup>*

**Technology Cooperation Backgrounder**  
**The Global Climate Coalition**

The expertise and experience of the private sector is therefore essential to any large-scale technology transfer effort.

Over the past five years, the Global Climate Coalition, the nation's leading business voice on global climate change issues, has participated in national and international panels on technology cooperation with representatives of Congress, the EPA, the DOC and the DOE. The coalition also has spoken on technology cooperation issues before the Intergovernmental Negotiating Committee (INC) and co-chaired a conference with the DOC on technology cooperation with Eastern Europe and participated actively in the IPCC. Many of GCC's member companies have joint ventures and other projects through which they provide advanced energy and environmental technologies overseas.

For example, The Southern Company, one of the largest investor-owned electric utilities in the United States, has undertaken a study for the Slovak Power Enterprise on how to improve the environmental performance and reliability of a 1,320-megawatt power plant. Kaiser Aluminum is working with Russian officials to improve the environmental performance of a smelter in Siberia and is also providing technical services to smelters and refineries in other countries. This experience has given the coalition useful and important insight into the special considerations necessary for improving technology cooperation programs.

**Business Involvement in Technology Transfer Programs.** The Global Climate Coalition and other business groups believe that, with greater cooperation from financial institutions and governments, U.S. industry could serve as a conduit for, and help coordinate, various programs to transfer technology and private industry assistance to many developing nations and countries with economies in transition. One mechanism by which this could be accomplished has been proposed: a business-initiated Management of Environmental and Energy Technology (MEET) Corps. This program would send industry managers overseas to examine environmental and energy-related issues and to design solutions to problems such as reducing methane leakage in natural gas systems or increasing the energy efficiency of fossil-fuel power plants.

**Elimination of Impediments to Technology Cooperation.** Although better coordination and communication between government and industry will facilitate technology cooperation, some issues still need to be addressed, including two identified by the IPCC:

*"In regard to technology transfer, two issues are still unclear. One is trade barriers in the form of import tariffs and legal barriers for the protection of intellectual property rights. Such barriers affect the adoption of high-tech components of energy-efficient equipment. A balance between the interests of developing nations and the interests of industrial firms elsewhere must be struck."<sup>4</sup>*

**Technology Cooperation Backgrounder**  
**The Global Climate Coalition**

The guarantee of intellectual property rights, including protection for patents, trademarks and copyrights is essential. Without such a guarantee, companies will lack a strong incentive to pursue the work of technological and industrial innovation overseas. Also, the uncertainties surrounding antitrust implications should be resolved to encourage joint ventures among private firms, which will allow companies to merge their resources and develop and introduce new technologies more quickly and cost-effectively.

**Benefits of Technology Cooperation.** Improved technology cooperation between developed and developing nations and between the public and private sector will foster a stable foreign investment climate and contribute greatly to far-reaching environmental improvements in addition to increasing the number of high-wage jobs by opening new export markets for U.S. firms already established as world leaders.

1. Climate Change 1992. The Supplementary Report to the IPCC Scientific Assessment. Cambridge University Press., Table A3.7.
2. Climate Change 1995: The Science of Climate Change. Draft Contribution of Working Group II to the IPCC Second Assessment Report. Accepted by governments at IPCC Working Group II, Third Session, Montreal, 16-20, 1995. Document: WGII/3rd/ (31.VIII.1995), section 20.5.2
3. Ibid. #2, section 20.5.3.2
4. Ibid. #2 section 20.5.2.

*The Global Climate Coalition is an organization of business trade associations and private companies established in 1989 to coordinate business participation in the scientific and policy debate on global climate change.*

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